

"And one final warning before we begin the exam — any stray eyeballs will be immediately thumped."

OK, the Skidmore Honor Code is in force (as always). Keep your eyes focused on your own exam. You should read each question carefully and answer each question completely. Think! Don't hesitate to comment on some aspect of a study that is not queried directly. Each question has associated with it a certain point value. I tend to think of points as minutes, so the entire exam is worth 70 points (thus, I think you should be able to complete the exam in 70 minutes). Don't spend 30 minutes on a 10-point question, or you won't finish the exam. On the other hand, if you've answered a 20-point question in 5 minutes, you've likely missed something. Good Luck! Have a nice weekend!

1. You've read the Mook article, with its extended discussion of external validity. First, describe the source of external invalidity in the Brown & Hanlon study (acquisition of grammatical speech through parental feedback) and the Hecht study (dark adaptation). Then, tell me why Mook (and you?) think that these specific examples of external invalidity are not of great concern. [10 pts]

2. Define an operational definition and then give an example of a specific operational definition from the Mook article, the Shlenker article excerpt, from the Festinger & Carlsmith study, or the Darley & Latané study. [5 pts]

3. Why is a nonmanipulated characteristic of a participant not a true independent variable? What is the source of ambiguity in doing research with such nonmanipulated characteristics? [5 pts]

4. Professor Ty Knott was interested in the relationship between the longevity of divorced women's marriages and the longevity of their divorced parent's marriages. To that end, he collected a sample of 25 divorced women whose parents had also been divorced. The StatView analysis of the data is seen below. Interpret these data as completely as you can. If a woman's parents had been married for 10 years prior to their divorce, how long would you predict that the woman's marriage would last before a divorce? If a woman's parents had never been divorced, what prediction could you make about the length of time before the woman's marriage might end in divorce? [10 pts]

Regression Summary

Yrs. Person Married vs. Yrs. Parents Married

Count	25
Num. Missing	0
R	.852
R Squared	.726
Adjusted R Squared	.714
RMS Residual	1.510

ANOVA Table

Yrs. Person Married vs. Yrs. Parents Married

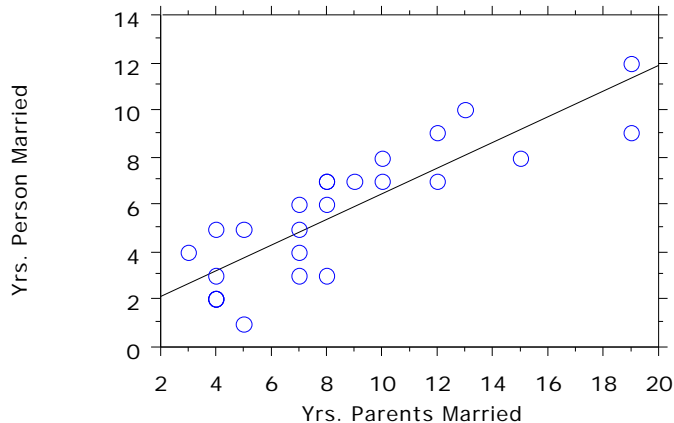
	DF	Sum of Squares	Mean Square	F-Value	P-Value
Regression	1	139.013	139.013	60.985	<.0001
Residual	23	52.427	2.279		
Total	24	191.440			

Regression Coefficients

Yrs. Person Married vs. Yrs. Parents Married

	Coefficient	Std. Error	Std. Coeff.	t-Value	P-Value
Intercept	1.108	.659	1.108	1.682	.1061
Yrs. Parents Married	.539	.069	.852	7.809	<.0001

Regression Plot



$Y = 1.108 + .539 * X; R^2 = .726$

5. We discussed the Darley & Latané study in class. Remember, that's the one in which a person is in a booth for a "communication" study, when one of the other "participants" appears to be in physical danger (choking, etc.). The study was designed to test bystander apathy. OK, that should be enough information to allow you to recall the basic study. Well, it's not widely known, but another pair of investigators was also interested in this issue — Dudley & Lamé. They did a study in which the participant thought that there were 5, 10, or 15 bystanders present in a communication study. The participant went into a booth as did the appropriate number of other "participants." (Each person in a different booth, of course.) The researchers measured the time (in minutes) before the participant would go to the aid of a fellow participant who appeared to be choking uncontrollably. First, interpret the results of this study as completely as you can. Then, answer the following questions:

- a. Can you detect any problems with the design of this study? What does it appear to be lacking? How would you redesign the study to correct the problem(s)? Be very explicit.
- b. Dudley and Lamé suggest that their study should be conducted again as a repeated measures design. If you think about the design of the study, you should be able to give them at least one very good reason that the study couldn't be conducted as a repeated measures design. [20 pts]

ANOVA Table for Time to Respond

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
No. of Bystanders	2	2.400	1.200	1.761	.1911	3.522	.325
Residual	27	18.400	.681				

Means Table for Time to Respond

Effect: No. of Bystanders

	Count	Mean	Std. Dev.	Std. Err.
5	10	2.800	.632	.200
10	10	3.400	.966	.306
15	10	3.400	.843	.267

6. Dr. June Bugg was interested in examining the extent to which one's attention is captured by a problem. She sets up her experiment on the computer so that the participant is presented with a series of problems, one at a time. Participants are told to solve as many problems as they can within a 10-minute period. At the same time, participants are told that when a small dot appears in the bottom left corner of the computer screen, they should hit the space bar. The experiment lasts about an hour, with 5 different types of problems that vary in difficulty (Very Easy, Easy, Moderate, Difficult, and Very Difficult). Dr. Bugg wants to "warm up" the participants for the Very Difficult problems, so she runs every participant through the Very Easy problems first (for 10 minutes), then through the Easy problems (for the next 10 minutes), then through the Moderate problems (10 minutes), then through the Difficult problems (10 minutes), and finally through the Very Difficult problems (10 minutes). [Obviously, in a 10-minute interval people will solve more easy problems than difficult problems, but that's not the dependent variable.] At 10 random times within each 10-minute period, a dot appears in the bottom left corner of the screen. The dependent variable in this experiment is the number of times that the participant detects the dot at the bottom of the screen. Dr. Bugg reasons that as tasks become more difficult, the participant's attention will be more absorbed by the problem, leading the participant to miss the appearance of the dot. Below is a partially completed source table for this experiment. Interpret the results as completely as you can. [20 pts]

ANOVA Table for Task Difficulty

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Subject	11	20.733	1.885				
Category for Task Difficulty	4	145.500	36.375	88.425	<.0001	353.702	1.000
Category for Task Difficulty * Subject	44	18.100	.411				

Means Table for Task Difficulty

Effect: Category for Task Difficulty

	Count	Mean	Std. Dev.	Std. Err.
Very Easy	12	9.333	.778	.225
Easy	12	9.083	.669	.193
Moderate	12	8.250	.622	.179
Difficult	12	7.500	.522	.151
Very Difficult	12	5.000	1.348	.389